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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/776,033

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9056

7590

01/13/2005

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EXAMINER

KOBERT, RUSSELL MARC

ART UNIT

PAPER NUMBER

2829

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/776,033	MAEDA ET AL	
	Examiner	Art Unit	
	Russell M Kobert	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0204</u> . | 6) <input type="checkbox"/> Other: _____  |

1. The abstract of the disclosure is objected to because it contains phrases such as "means" or "said." Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Byrd (6819132).

Byrd anticipates (Figures 1 and 7) a probe module electrically coupled to a terminal of a device under test (112, 113, 116, 118) for sending and/or receiving a signal to and/or from said device under test (see Abstract), comprising:

a first substrate (32);

a probe pin (38, 126) provided on said first substrate to be in contact with said terminal (113) of said device under test (118);

a first signal transmission pattern (34, 36, 117, 120) formed on said first substrate, said first signal transmission pattern being electrically coupled to said probe pin (col 5, ln 53-67), with a gap (best shown in Figures 4A and 4B between locations 58) formed at said first signal transmission pattern not to transmit any electric signal; and

a first switch means (42, Figures 5A-B: 78, 80, 122; Byrd mentions bimetallic switch may be used, see col 10, ln 54-55) for short-circuiting or open-circuiting said gap of said first signal transmission pattern; as recited in claim 1.

As to claim 2, Byrd anticipates a second signal transmission pattern formed on said first substrate, said second signal transmission pattern being electrically coupled to said probe pin, with a gap formed at said second signal transmission pattern not to transmit any electric signal; and a second switch means for short-circuiting or open-circuiting said gap of said second signal transmission pattern, wherein said probe pin is coupled to a joining point of said first and second signal transmission patterns (col 5, ln 31-60; emphasis on last sentence "In other configurations (not shown), a single conductive trace 34 may provide electrical signals for more than one probe element 38

during testing” thus providing a joining point between first and second signal transmission patterns).

As to claim 3, the limitations of selectively supplying a pulse input signal and a direct current signal to first and second transmission patterns wherein the first and second switch means controls whether to supply the pulse input signal or direct current input signal to the device under test does not further limit the structure of the claimed apparatus and as such Byrd anticipates the limitations of claim 3. Moreover Byrd states “the test signals can include specific combinations of voltages and/or currents transmitted through the probe card to the ICs on the wafer” and further emphasizes that the probe cards may be further configured to meet the needs of the particular devices under test (see col 1, ln 61-63 and col 2, ln 49-59).

As to claim 4, Byrd anticipates a gap arranged near the probe pin on the first substrate.

As to claim 5, Byrd anticipates (see Figures 5A and 5B) the first switch means as a switch actuator having a first end (80) fixed and a second end (78) comprising a contact to short-circuit the gap.

As to claim 6, Byrd anticipates (Figure 9) a second substrate (151) provided substantially parallel to the first substrate wherein the first end (upper/leftmost portion of 160) of the switch actuator (160) is fixed to the second substrate and the second end of the switch actuator (rightmost portion of 160) is arranged near the gap.

As to claim 7, Byrd anticipates a bimorph element (78 and 80) formed by laminating two materials of which thermal expansion coefficients are different from each other; and

A heater (inherent to operation of the bimetallic switch of Byrd and emphasized by the statement "when the current becomes excessive, the temperature of the first metal conductor 78 and second metal conductor 80 rises;" see col 11, ln 2-5) for heating the bimorph element,

wherein the bimorph element moves the contact to short-circuit the gap when the bimorph element is heated by the heater (col 10, ln 54 - col 11, ln 67).

As to claims 8, 9, 10 and 11 the limitations are considered inherent to the apparatus of Byrd and are within the normal range of operating the apparatus of Byrd.

As to claim 12, Byrd anticipates the first substrate being arranged substantially perpendicular to the device under test (col 14, ln 10-15; specifically mentioned "vertical contact probe cards").

Byrd anticipates (Figures 1 and 7) a testing apparatus for testing a device under test, comprising:

a pattern generating unit (part of 114) for generating a test signal to test said device under test; a probe module (116) for receiving said test signal generated by said pattern generating unit, supplying said received test signal to said device under test (112, 118), and receiving an output signal outputted by said device under test based on said test signal; and

a judging unit (part of 114) for judging quality of said device under test based on said output signal received by said probe module (col 12, ln 32 - col 13, ln 8; emphasis on description of the operation of test equipment 114), wherein said probe module comprises:

a first substrate (32);

a probe pin (38, 126) provided on said first substrate to be in contact with said terminal (113) of said device under test (118);

a first signal transmission pattern (34, 36, 117, 120) formed on said first substrate, said first signal transmission pattern being electrically coupled to said probe pin (col 5, ln 53-67), with a gap (best shown in Figures 4A and 4B between locations 58) formed at said first signal transmission pattern not to transmit any electric signal; and

a first switch means (42, Figures 5A-B: 78, 80, 122; Byrd mentions bimetallic switch may be used, see col 10, ln 54-55) for short-circuiting or open-circuiting said gap of said first signal transmission pattern; as recited in claim 13.

4. Claims 1, 5, 10 and 11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nees et al (5442300).

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Levy et al (5751151) shows a probe module (Figure 4) having a substrate (42) and switch means (30).

6. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (571) 272-1963. The Examiner's Supervisor, Nestor R. Ramirez, can be reached at (571) 272-2034. For an automated menu of Tech Center 2800 phone numbers call (571) 272-2800.



Russell M. Kobert  
Patent Examiner  
Group Art Unit 2829  
January 6, 2005



DAVID ZARNEKE  
PRIMARY EXAMINER

1/7/05